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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,951	12/19/2001	Xiaoxiao Zhang	CL/V-31599A	6417

1095 7590 01/21/2004

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EXAMINER

LAVARIAS, ARNEL C

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 01/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/025,951

Applicant(s)

ZHANG ET AL

Examiner

Arnel C. Lavarias

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pw

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2002 and 17 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) 8-47 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 . 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Invention IA (Claims 1-7) in Paper No. 7, dated 6/17/03, is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 8-47 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 7, dated 6/17/03.

Oath/Declaration

3. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

The specification to which the oath or declaration is directed has not been adequately identified. See MPEP § 601.01(a).

Drawings

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:
Figure 1- Reference numeral 7.

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A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

5. The abstract of the disclosure is objected to because of the following informality:

Abstract, line 1- 'The invention provides a' should read 'A'.

Correction is required. See MPEP § 608.01(b).

6. The disclosure is objected to because of the following informalities:

Page 13, line 22- '38' should read '36'

Page 14, line 10- '30' should read '36'

Page 18, line 5- 'from' should read 'form'

Page 23, line 26- '4,595,070' should read '4,959,070'.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Israel (U.S.

Patent No. 6139145) in view of Zhang et al. (U.S. Patent No. 5997140), of record.

Regarding Claims 1-5, Israel discloses an optical lens (See for example 60 in Figures 3-5) comprising at least one holographic optical element (See 66 in Figures 3-5) and at least one focusing element (See 64 in Figures 3-5), the holographic optical element characterized by an interference fringe pattern (it is noted that holograms are inherently comprised of interference fringe patterns), the holographic optical element further characterized as possessing substantially neutral focusing power (See col. 8, lines 19-46; it is noted that the holographic optical element provides prismatic power). Israel additionally discloses the optical lens being biocompatible (See col. 8, lines 1-18), the optical lens being a contact lens (See col. 8, lines 1-18), and the optical lens being a spectacle lens (See col. 8, lines 1-18), the optical lens being an intraocular lens (See col. 8, lines 1-18), and the holographic optical lens element being a transmission holographic optical lens element (See for example col. 3, lines 8-18; col. 9, lines 26-36). Israel lacks the holographic optical element having a finite ray acceptance angle that diffracts up to 100% of incoming light when the Bragg condition is met. However, it is well known in the art of holography that only light of a particular range of wavelengths and of a particular range of angle of incidence will be diffracted by the interference fringes on a hologram, and that light outside of these wavelength and angle ranges will transmit through the hologram unmodified. For example, Zhang et al. teaches the use of a holographic optical element as part of an optical lens (See for example Figures 1-2), wherein the holographic optical element has a finite ray acceptance angle that diffracts up to 100% of incoming light when the Bragg condition is met (See col. 3, line 21-col. 4, line 23). Therefore, it would have been obvious to one having ordinary skill in the art at

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the time the invention was made to have the holographic optical element of Israel have a finite ray acceptance angle that diffracts up to 100% of incoming light when the Bragg condition is met, as taught by Zhang et al., to provide an active and highly selective means of modifying of the incident light (via diffraction).

Regarding Claim 6, Israel in view of Zhang et al. discloses the invention as set forth above in Claim 1, except for the holographic optical lens element being a transmission volume holographic optical lens element. However, Zhang et al. additionally teaches that the holographic optical element used as part of an optical lens may be a transmission volume holographic optical lens element (See col. 2, lines 20-36; col. 3, lines 12-20). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the holographic optical element of Israel in view of Zhang et al. to be a transmission volume holographic optical element, for the purpose of reducing the size (i.e. thickness) of the holographic optical element, while retaining a high degree of diffraction efficiency.

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Israel in view of Zhang et al. as applied to Claim 1 above, and further in view of Chang (U.S. Patent No. 4830441).

Israel in view of Zhang et al. discloses the invention as set forth above in Claim 1, except for the holographic optical lens element being a reflective holographic optical lens element. However, it is well known in the art of holography that holographic optical lens elements may be fabricated to operate either in transmission mode or in reflective mode, depending on the holographic writing configuration used (i.e. whether the object and

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reference beams were incident on the same side or on opposite sides of the holographic recording medium). For example, Chang teaches optical elements for laser eye protection (See for example Abstract; Figure 3), wherein holographic optical elements (See for example 331, 332, 341, 342 in Figure 3) are utilized as part of an optical lens system (See 330, 340 in Figure 3) to provide protection for the eyes from stray laser light. In particular, the holographic optical elements are fabricated (See Figures 1-2) such that the reference and object beams are incident on opposite sides of the holographic recording medium (See 163 in Figures 1-2), such that the holographic optical elements acts as a reflecting element when incident light having a predetermined wavelength(s) and proper incident angle(s) strike the surface of the optical element (See for example col. 7, line 41-col 8, line 4). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have holographic optical lens element of the optical lens of Israel in view of Zhang et al. be a reflective holographic optical lens element, as taught by Chang, for the purpose of providing additional light filtering to protect the optical system and observer from spurious light noise and high light intensity levels.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 703-305-4007. The examiner can normally be reached on M-F 8:30 AM - 5 PM EST. **Please**

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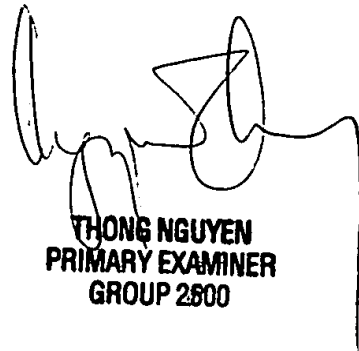
note that after January 20, 2004, the examiner may be reached at the new telephone number: 571-272-2315.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 703-305-0024. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.



Arnel C. Lavarias
1/16/04



**THONG NGUYEN
PRIMARY EXAMINER
GROUP 2800**